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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,291	09/26/2001	Timothy R. Martin	KCC-15,832	1633

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EXAMINER

JUSKA, CHERYL ANN

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/21/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/964,291

Applicant(s)

MARTIN, TIMOTHY R.

Examiner

Cheryl Juska

Art Unit

1771

A8-7

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 10-25, and 36-39 are rejected under 35 USC 102(b) as anticipated by JP 11-061624 issued to Makihara.

Makihara discloses a loop fabric for a hook-and-loop fastener comprising a first fiber layer and a second fiber layer that are hydroentangled to form a laminate (abstract). The first fiber layer is thermally shrunk to produce “short row-like projections” (i.e., loops) in the second fiber layer (abstract). The second fiber layer is preferably a thermally bonded spunbond or melt blown nonwoven fabric having a basis weight of about 5-20 g/m<sup>2</sup> (sections [0012] and [0023]). The fibers of said second layer may be polyolefin, polyester, or polyamide and have a denier of about 1-10 (sections [0025] and [0027]). The first fiber layer may be a carded, spunbond, or melt blown web of polyester, polyamide, or polyolefin fibers having a basis weight of about 5-10 g/m<sup>2</sup> (section [0029]). The temperature of thermal shrinkage is up to 30C greater than the melting point of the fiber (section [0041]).

The working example is made of a first fiber layer comprising 50% (2 deniers, 51mm) of polyethylene/polypropylene sheath/core bicomponent fibers and 50% (2 deniers, 51mm) of ethylene-propylene random-copolymer fiber (section [0046]). The

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first fiber layer has a basis weight of 20 g/m<sup>2</sup>. The second fiber layer comprises a polypropylene spunbond nonwoven fabric having a basis weight of 15 g/m<sup>2</sup> (section [0046]). The two fiber layers are hydroentangled to form a fibrous laminate. The inventive hook-and-loop fastener is suitable for disposable articles such as diapers (section [0050]). Thus, it can be seen that claims 1-6, 10-25, and 36-39 are anticipated by the cited Makihara reference.

***Claim Rejections - 35 USC § 102/103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 and 35 are rejected under 35 USC 102(b) as anticipated by, or in the alternative, under 35 USC 103(a) as being obvious over the cited Makihara reference.

Makihara teaches that it is desirable for the shrinkage to occur in the longitudinal direction (i.e., machine direction), while minimizing the shrinkage in the lateral direction (i.e., cross direction). Section [0033] teaches the direction of shrinkage is partly influenced by the type of nonwoven employed. In order to maximize shrinkage in the longitudinal direction and minimize shrinkage in the lateral direction, Makihara teaches a bonded carded web of parallel fibers is preferred (section [0040]). However, this implies that at least some shrinkage does occur in the cross direction, regardless of the type of nonwoven employed. As such, said claim is anticipated by the cited Makihara reference.

In the alternative, it would have been obvious to one of ordinary skill in the art to control the variables of the heat shrinkage treatment in order to increase or decrease the shrinkage in a particular direction. For example, to achieve even shrinkage in both directions, a random web would be employed. Additionally, the use of a tenter frame during heat treatment would also affect the direction of shrinkage. As such, it is argued that claims 9 and 35 are obvious over the cited Makihara reference.

***Claim Rejections - 35 USC § 103***

5. Claims 7 and 8 are rejected under 35 USC 103(a) as being unpatentable over the cited Makihara reference in view of US 5,997,981 issued to McCormack et al.

Makihara does not teach bonding the two fiber layers with an S-weave bond pattern having a bond area of about 10-25%. Instead, Makihara employs hydroentanglement as a means for bonding the two fiber layers. However, S-weave bond patterns are well-known in the art of hook-and-loop fasteners. For example, McCormack discloses a loop fabric for a hook-and-loop fastener that employs a pre-bonded nonwoven fabric (abstract). When using a spunbond fabric, the bond pattern is preferably an S-weave pattern as shown in Figure 4 and has a bond area of less than 30% (col. 9, line 59-col. 10, line 1). Thus, it would have been obvious to one of ordinary skill in the art to modify the Makihara nonwoven having the two fiber layers by employing dual layer spunbond fabric having an S-weave bond pattern, rather than a hydroentangled dual layer nonwoven. Motivation to do so would be the inherent advantages of spunbond fabrics, such as low cost and high strength.

6. Claims 26-32 are rejected under 35 USC 103(a) as being unpatentable over the cited Makihara reference in view of US 6,066,221 issued to Marmon et al.

Makihara teaches a "hot blast penetration type dryer" is suitable for the heat treatment process of shrinking the fibers (sections [0041] and [0048]). It is presumed that this "hot blast processing" is equivalent to a hot air knife process, as is presently claimed. [Note an official translation of the reference has been ordered and will be available with the next Office Action.] Makihara is silent with respect to specific process parameters such as line speed, air velocity, and vacuum. However, the presently claimed process features are known in the art of hot air knife processing. For example, Marmon discloses a hot air knife process for bonding nonwoven webs. Specifically, Marmon teaches a hot air temperature of about 200-550°F and a line speed of about 100-3000 feet per minute (col. 6, lines 16-18 and col. 7, lines 37-40). Additionally, Marmon teaches the air velocity is a result effective variable which is dependent upon the composition and basis weight of the nonwoven web, the line speed, the degree of bonding required, and the temperature of the hot air (col. 6, lines 28-39). In effect, Marmon states the operating parameters of line speed, air velocity, and air temperature are easily determined by one of ordinary skill in the art (col. 6, lines 39-42). Thus, it would have been obvious to one skilled in the art to select the claimed process parameters of line speed and air velocity since these parameters are result effective variables as evidenced by Marmon. Additionally, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215. Thus, claims 26-32 are rejected.

7. Claims 33 and 34 are rejected under 35 USC 103(a) as being unpatentable over the cited Makihara and Marmon references in further view of US 5,707,468 issued to Arnold et al.

Marmon does not explicitly teach a vacuum under a forming wire for holding the nonwoven as it is being treated with the hot air knife. However, said vacuums are known in the art. For example, Arnold discloses a compaction-free method of increasing the integrity of a nonwoven web. Specifically, Arnold teaches the following at col. 6, lines 47-55:

An endless, generally foraminous forming surface 6 receives the continuous spunbond fibers from the fiber draw unit 5. The forming surface 6 is a belt which travels around guide rollers 7. A vacuum 8 positioned below the forming surface 6 draws the fibers against the forming surface 6. Immediately after formation, hot air is directed through the fibers from a hot air knife (HAK) 9. The HAK 9 gives the web sufficient integrity to be passed off of the forming surface 6 and onto belt 10 for further processing.

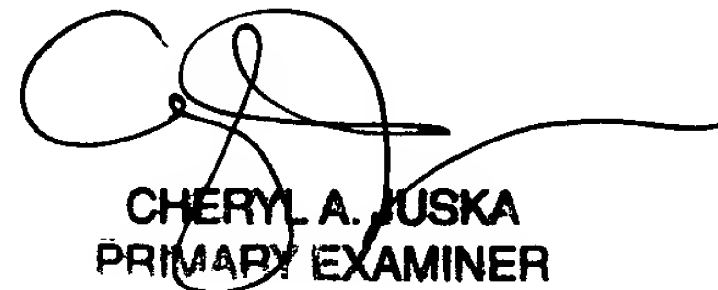
Thus, it would have been obvious to one of ordinary skill in the art to employ a foraminous wire surface having a vacuum underneath in the hot air knife treatment process in order to control the placement of the nonwoven and the amount of heat spreading to surrounding areas. Thus, claims 33 and 34 are rejected.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Cheryl Juska whose telephone number is 703-305-4472. The Examiner can normally be reached on Monday-Friday 10am-6pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



CHERYL A. JUSKA  
PRIMARY EXAMINER